

SEQUENCE LISTING

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(ii) TITLE OF INVENTION: Improvements in and relating to
forensic identification

(iii) NUMBER OF SEQUENCES: 36

(iv) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(EPO)

(vi) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: GB 9713597.4
(B) FILING DATE: 28-JUN-1997

(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 40 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

TCTATCTGTC TATCTGTCTG TCTGTCTGTC TATCTATCTA
40

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 48 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

TCTATCTGTC TGTCTGTCTG TCTATCTATC TATCTATCTA TCTATCTA
48

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 52 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

TCTATCTATC TGTCTGTCTG TCTGTCTATC TATCTATCCA TCTATCTATC TA
52

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 55 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

TCATTCATTC ATTCATCATT CATTCATTCA TTCATTCATT CATTCATTTCG TTCAT
55

(2) INFORMATION FOR SEQ ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

TCTATCTATC TATCTATCTA TCTATCTATC TA
32

(2) INFORMATION FOR SEQ ID NO: 6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 76 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

TCTATCTATC TGTCTATCTA TCTATCTATC TATCTATCTA TCTATCTATC TATCTATCTA
60

TCTATCTATC TATCTA
76

(2) INFORMATION FOR SEQ ID NO: 7:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 65 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

TTTCTTTTCTT TCTTTTTTCT CTTTCTTTCT TTCTTTCTTT TCTTTCTTTC TTTCTCCTTC
60

CTTCC
65

(2) INFORMATION FOR SEQ ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 108 base pairs
 - (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

TTTCTTTCTT TCTTTTTTCT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT
60

CTTTCTTTCT TTCCTTCTTT CTTTCTTTCT TTCTTTCTCC TTCCTTCC
108

(2) INFORMATION FOR SEQ ID NO: 9:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 120 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

TTTCTTTCTT TCTTTTTTCT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT
60

CTTTCTTTCT TTCTTTCTTT CTTTCCTTCT TTCTTTCTTT CTTTCTTTCT CCTTCCTTCC
120

(2) INFORMATION FOR SEQ ID NO: 10:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 126 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Homo sapiens

(I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
60

TTCTTTCTTT CTTTCTTTCT TTCTTCCTTC CTCCTTTTCT TTCTTTCTCC TTCCTTCCTT
120

CCTTCC
126

(2) INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 130 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Homo sapiens

(I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
60

TTCTTTCTTT CTTTCTTTCT TTCTTTCTTC CTCCTTCCTT TTCTTTCTTT CTCCTTCCTT
120

CCTTCCTTCC
130

(2) INFORMATION FOR SEQ ID NO: 12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 134 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
60
TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTCCTTCCT TCCTTTCTTT CTTTCTCCTT
120
CCTTCCTTCC TTCC
134

(2) INFORMATION FOR SEQ ID NO: 13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 170 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTGTCT
60
GTCTGTCTGT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
120
TTCTTCCTTC CTCCTTCCTT CTCCTTCCTT CCTTCCTTCC

170

(2) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 174 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTGTCT
60

GTCTGTCTGT CTGTCTTTCT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
120

TTCTTTCTTC CTTTCTTCCT TCCTTTCTTT CTTTCTCCTT CCTTCCTTCC TTCC
174

(2) INFORMATION FOR SEQ ID NO: 15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 178 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
60

TTCTTTCTGT CTGTCTGTCT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
120

TTCTTTCTTT CTTTCTTCCT TCCTTCCTTT CTTTCTTTCT CCTTCCTTCC TTCCTTCC
178

(2) INFORMATION FOR SEQ ID NO: 16:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 182 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
60

TTCTGTCTGT CTGTCTGTCT GTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
120

TTCTTTCTTT CTTTCTTCCT TCCTTCCTTC CTTTCTTTCT TTCTCCTTCC TTCCTTCCTT
180

CC
182

(2) INFORMATION FOR SEQ ID NO: 17:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 190 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
60

TTCTTTCTTT CTGTCTGTCT GTCTGTCTGT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
120

TTCTTTCTTT CTTTCTTTCT TTCTTTCTTC CTCCTTCCT TTCTTTCTTT CTCCTTCCTT
180

CCTTCCTTCC
190

(2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 194 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

TTTCTTTCTT TCTTTCTTTT TTCTTTCTTT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
60

TTCTTTCTTT CTTTCTTTCT GTCTGTCTGT CTTTCTTTCT TTCTTTCTTT CTTTCTTTCT
120

TTCTTTCTTT CTTTCTTTCT TTCTTTCTTC CTCCTTCCT TCCTTTCTTT CTTTCTCCTT
180

CCTTCCTTCC TTCC
194

(2) INFORMATION FOR SEQ ID NO: 19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 113 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

TCTATCTATC TATCTATCTG TCTGTCTGTC TGTCTGTCTG TCTATCTATC TATATCTATC
60

TATCTATCAT CTATCTATCC ATATCTATCT ATCTATCTAT CTATCTATCG TCT
113

(2) INFORMATION FOR SEQ ID NO: 20:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 115 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG TCTGTCTATC TATCTATCAT
60

CTATCTATCC ATATCTATCT ATCTATCTAT CTATCTATCT ATCTATCTAT CGTCT
115

(2) INFORMATION FOR SEQ ID NO: 21:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 119 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG TCTGTCTATC TATCTATCAT
60

CTATCTATCC ATATCTATCT ATCTATCTAT CTATCTATCT ATCTATCTAT CTATCGTCT
119

(2) INFORMATION FOR SEQ ID NO: 22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 121 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

TCTATCTATC TATCTATCTG TCTGTCTGTC TGTCTGTCTG TCTATCTATC TATATCTATC
60

TATCTATCAT CTATCTATCC ATATCTATCT ATCTATCTAT CTATCTATCT ATCTATCGTC
120

T

121

(2) INFORMATION FOR SEQ ID NO: 23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 125 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Homo sapiens

(I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG TCTATCTATC TATATCTATC
60

TATCTATCAT CTATCTATCC ATATCTATCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120

CGTCT
125

(2) INFORMATION FOR SEQ ID NO: 24:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 129 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

(A) ORGANISM: Homo sapiens

(I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

TCTATCTATC TATCTATCTG TCTGTCTGTC TGTCTGTCTG TCTATCTATC TATATCTATC
60

TATCTATCAT CTATCTATCC ATATCTATCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120

CTATCGTCT
129

(2) INFORMATION FOR SEQ ID NO: 25:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 133 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

TCTATCTATC TATCTATCTG TCTGTCTGTC TGTCTGTCTG TCTATCTATC TATATCTATC
60

TATCTATCAT CTATCTATCC ATATCTATCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120

CTATCTATCG TCT
133

(2) INFORMATION FOR SEQ ID NO: 26:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 137 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

TCTATCTATC TATCTATCTA TCTATCTGTC TGTCTGTCTG TCTGTCTATC TATCTATATC
60

TATCTATCTA TCATCTATCT ATCCATACTCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120

CTATCTATCT ATCGTCT
137

(2) INFORMATION FOR SEQ ID NO: 27:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 141 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG TCTGTCTATC TATCTATATC
60
TATCTATCTA TCATCTATCT ATCCATATCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120
CTATCTATCT ATCTATCGTC T
141

- (2) INFORMATION FOR SEQ ID NO: 28:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 143 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: Homo sapiens
 - (I) ORGANELLE: Mitochondrion

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG TCTGTCTATC TATCTATATC
60
TATCTATCTA TCATCTATCT ATCCATATCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120
CTATCTATCT ATATCTATCG TCT
143

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 147 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG TCTGTCTATC TATCTATATC
60

TATCTATCTA TCATCTATCT ATCCATATCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120

CTATCTATCT ATCTATATCT ATCGTCT
147

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 151 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG TCTGTCTATC TATCTATATC
60

TATCTATCTA TCATCTATCT ATCCATATCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120

CTATCTATCT ATCTATCTAT ATCTATCGTC T
151

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 155 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG TCTGTCTATC TATCTATATC
60

TATCTATCTA TCATCTATCT ATCCATATCT ATCTATCTAT CTATCTATCT ATCTATCTAT
120

CTATCTATCT ATCTATCTAT CTATATCTAT CGTCT
155

(2) INFORMATION FOR SEQ ID NO: 32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 157 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

TCTATCTATC TATCTATCTA TCTATCTATC TATCTATCTA TCTGTCTGTC TGTCTGTCTG
60

TCTATCTATC TATATCTATC TATCTATCAT CTATCTATCC ATATCTATCT ATCTATCTAT
120

CTATCTATCT ATCTATCTAT CTATCTATCT ATCGTCT
157

(2) INFORMATION FOR SEQ ID NO: 33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 161 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

TCTATCTATC TATCTATCTA TCTATCTATC TATCTATCTA TCTATCTGTC TGTCTGTCTG
60

TCTGTCTATC TATCTATATC TATCTATCTA TCATCTATCT ATCCATATCT ATCTATCTAT
120

CTATCTATCT ATCTATCTAT CTATCTATCT ATCTATCGTC T
161

(2) INFORMATION FOR SEQ ID NO: 34:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 165 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

TCTATCTATC TATCTATCTA TCTATCTATC TATCTATCTA TCTATCTGTC TGTCTGTCTG
60

TCTGTCTATC TATCTATATC TATCTATCTA TCATCTATCT ATCCATATCT ATCTATCTAT
120

CTATCTATCT ATCTATCTAT CTATCTATCT ATCTATCTAT CGTCT
165

(2) INFORMATION FOR SEQ ID NO: 35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 169 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

TCTATCTATC TATCTATCTA TCTATCTATC TATCTATCTA TCTATCTATC TATCTGTCTG
60

TCTGTCTGTC TGTCTATCTA TCTATATCTA TCTATCTATC ATCTATCTAT CCATATCTAT
120

CTATCTATCT ATCTATCTAT CTATCTATCT ATCTATCTAT CTATCGTCT
169

(2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: Homo sapiens
- (I) ORGANELLE: Mitochondrion

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

AGAAAGAAAG AAAGAAAGAA AGAAAGAAAG AA

32